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NEW AND RECONSIDERED MEXICAN ACANTHACEAE. IV.

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ABSTRACT: *Dyschoriste mcvaughii,* characterized by its diminutive habit, red corollas, and inconspicuously spurred thecae, is newly described from western Jalisco. The monotypic genera *Ixtlania* and *Tabascina* are considered to be congeneric with *Justicia* and the new names, *J. ixtlania* and *J. tabascina* are provided. A new combination, *Schaueria parviflora,* is proposed for the species resulting from the taxonomic merger of *Streblacanthus parviflorus* and *Schaueria calycobractea.*

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INTRODUCTION

Ongoing studies of the more than 350 species of Acanthaceae in Mexico continue to necessitate the description of new and the reevaluation of previously described taxa. In this report, a remarkable red-flowered species of *Dyschoriste* is described for the first time. Recent collections and studies of two monotypic genera, *Ixtlania* M. E. Jones and *Tabascina* Baillon, reveal them to be congeneric with the large and polymorphic genus *Justicia* L. *Schaueria calycobractea* R. Hilsenbeck & D. Marshall, a species recently described from Veracruz, is shown to be correctly classified generically but conspecific with the previously described *Streblacanthus parviflorus* Leonard from Guatemala and thus in need of nomenclatural renovation. Detailed descriptions are provided for each of these taxa.

Dyschoriste mcvaughii T. F. Daniel, sp. nov.
(Figures 1, 2f)

TYPE.—MEXICO. Jalisco: between Ayutla and Mascota near summit of pass, 7–8 mi NW of Los Volcanes, 30 April 1951, *R. McVaugh 12187* (Holotype: MICH!; isotype: US!).

Herba perennis usque ad 1 dm alta. Folia sessilia vel subsessilia petiolo usque ad 2 mm longo, elliptica vel obovata, 4–18 mm longa, 3–7 mm lata, 1.1–4-plo longiora quam latiora. Dichasia 1–3-flora, in axillis foliorum distalium sessilia vel subsessilia. Bracteolae et bracteolae secundae lineares vel lineares-ellipticae vel lineares-oblanceolatae, 5.5–11 mm longae, 1–3 mm latae. Calyx 9–12 mm longus lobis tubo 1.4–3-plo longioribus. Corolla rubra, 34–42 mm longa. Stamina 9–14 mm longa, thecae 1.8–2.4 mm longae, basi inconspicuae calcaratae vel muticae. Stylus 27–38 mm longus. Capsula 7 mm longa, glabra.

Perennial herb from woody rhizome to 1 dm tall, with numerous woody roots. Stems subquadrate to quadrate-sulcate, densely pubescent with straight to flexuose eglandular trichomes 0.1–0.3(–0.5) mm long. Leaves sessile or subsessile with petioles to 2 mm long, blades elliptic to obovate, 4–18 mm long, 3–7 mm wide, 1.1–4 times longer than wide, rounded to acute at apex, rounded to acute to cuneate at base, surfaces pubescent (especially along veins) like stems (although the trichomes tending to be more antrorse), proximal leaves reduced in size, 1.5–3 mm long. Inflorescence of 1–3-flowered dichasia borne in axils of distal leaves forming a terminal spicate thyrse, dichasia sessile or sub-

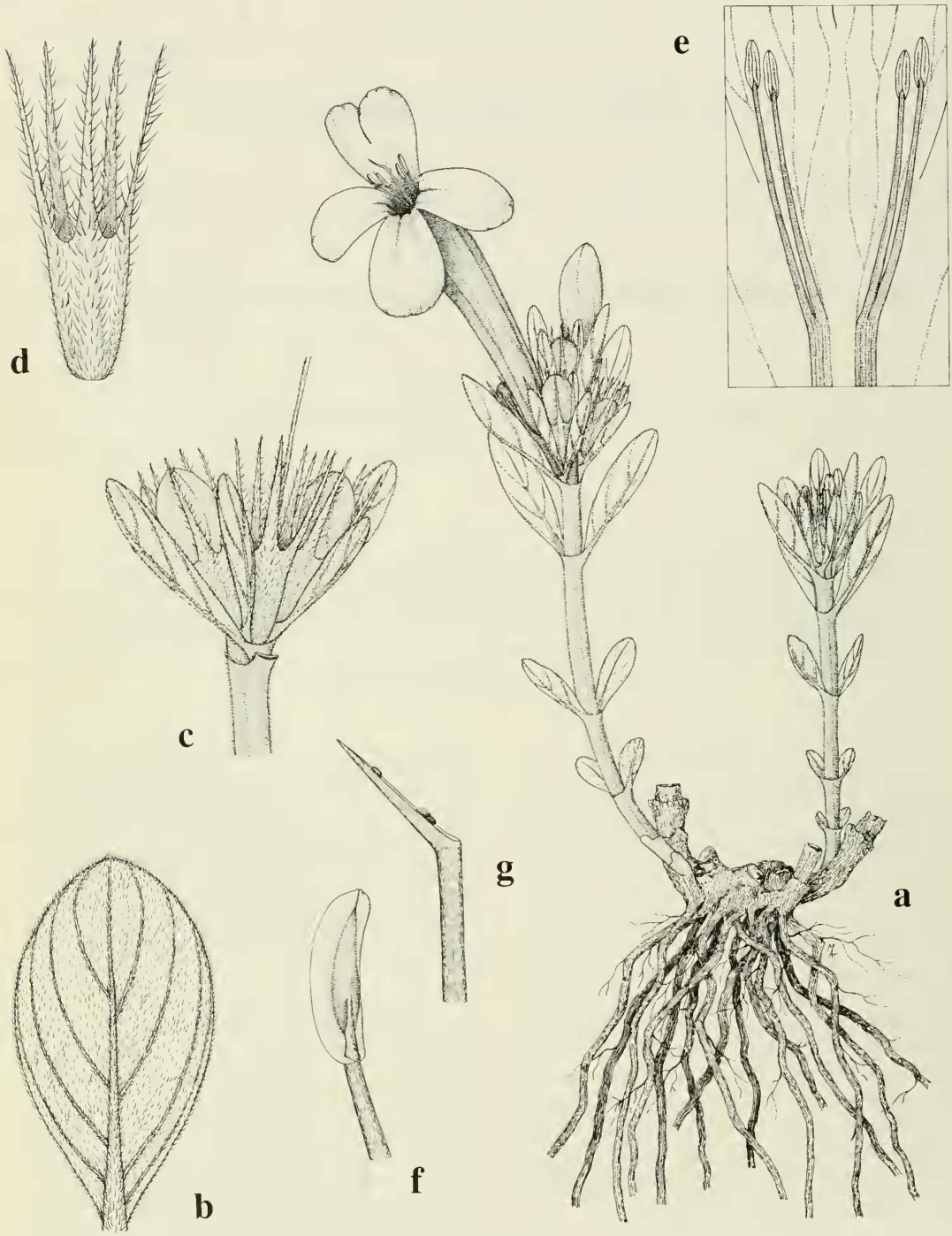

FIGURE 1. *Dyschoriste mcvaughii*. a, habit, ×1.2 (*McVaugh 12187*); b, leaf, ×4 (*Daniel & Bartholomew 4828*); c, flowering node with leaf removed showing 3-flowered dichasium, ×3 (*McVaugh 12187*); d, calyx, ×5 (*McVaugh 12187*); e, androecium in opened corolla, ×5 (*Daniel & Bartholomew 4828*); f, distal portion of stamen, ×12 (*McVaugh 12187*); g, distal portion of style and stigma, ×15 (*Daniel & Bartholomew 4828*).

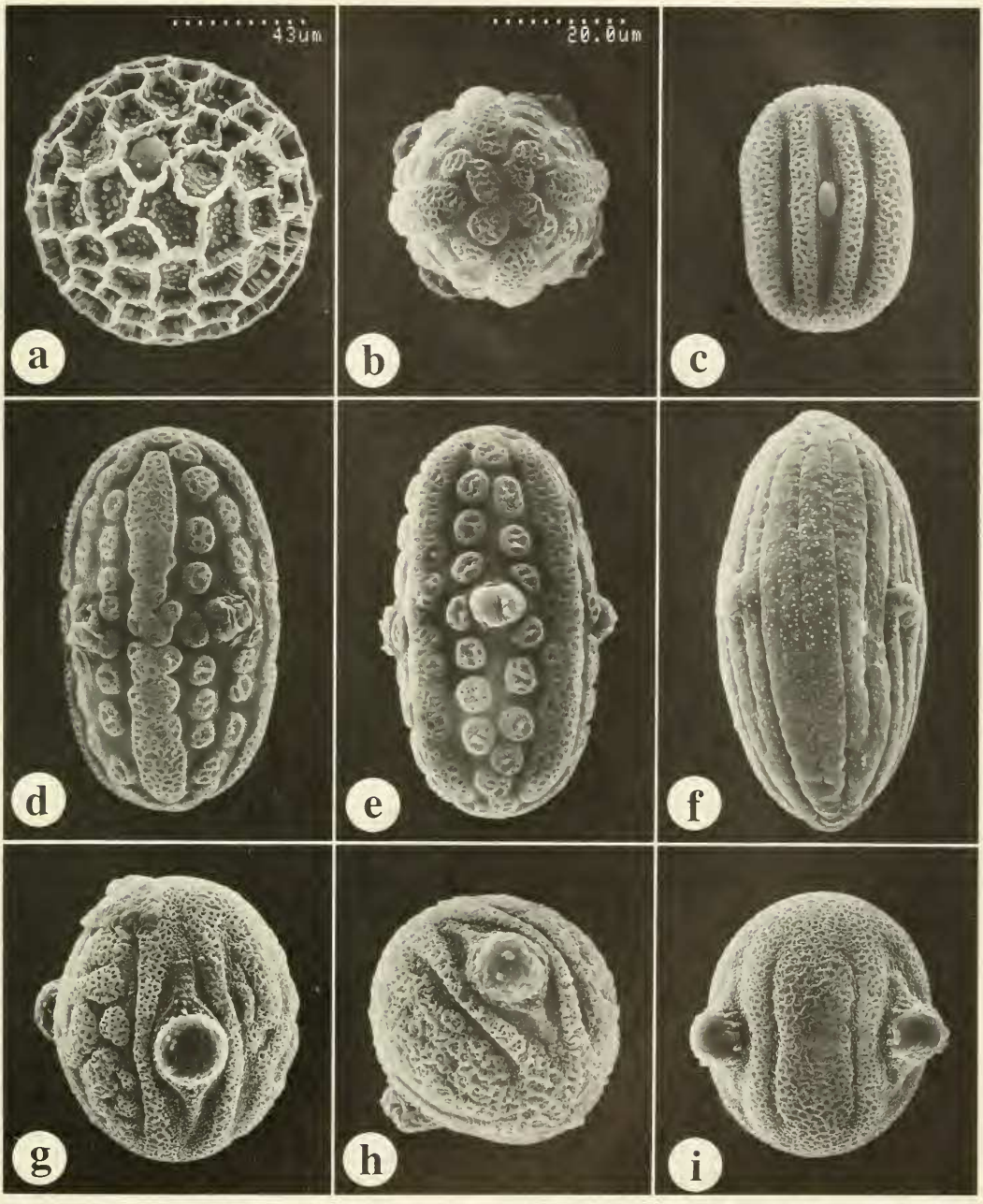

FIGURE 2. Scanning electron micrographs of pollen. a, *Ruellia petiolaris* (Nees) T. Daniel (*Daniel & Breedlove 4930*); b, *Justicia tabascina* (*Cowan 2860*), polar view; c, *Justicia ixtlania* (*Daniel 2070*), equatorial view; d, *J. tabascina* (*Cowan 2860*), equatorial view showing surface between 2 trema regions; e, *J. tabascina* (*Cowan 2860*), equatorial view showing 1 trema region; f, *Dyschoriste mcvaughii* (*Daniel 4828*), equatorial view; g, *Schaueria parviflora* (*Trigos 198*), equatorial view; h, *S. parviflora* (*Herrera 72*), subequatorial view; i, *S. parviflora* (*Contreras 11180*), equatorial view. Scale in c–i same as in b.

sessile with peduncles to 1.5 mm long. Bractlets and secondary bractlets linear to linear-elliptic to linear-oblanceolate, 5.5–11 mm long, 1–3 mm wide, pubescent like leaves. Calyx 9–12 mm long, tube 3–5 mm long, hyaline between veins, lobes subulate, 6–9 mm long, 1.4–3 times longer than tube, aristate and becoming stiff apically, pubescent like leaves. Corolla red, 34–42 mm long, externally pubescent with flexuose eglandular trichomes, tube 24–33 mm long, slightly curved and gradually ampliate distally but not differentiated into a well-defined throat, upper lip 9–11 mm long with 2 subcirculate lobes 4.5–6 mm long, 4.5–7 mm wide, lower lip 8.5–12 mm long with 3 lobes obovate-elliptic to obovate, 8–10 mm long, 5–7 mm wide. Stamens didynamous, 9–14 mm long, the two pairs fused for 1–2 mm at base, thecae 1.8–2.4 mm long, muticous or with blunt to pointed appendages 0.05–0.1 mm long at base, pollen prolate, 3-colporate, intercolpal regions multi-striate with 5–14 pseudocolpi of irregular lengths, exine minutely verrucate. Style 27–38 mm long, pubescent with eglandular trichomes, stigma filiform, 1.3–1.5 mm long. Capsule ellipsoid, 7 mm long, glabrous. Seeds not seen.

Distribution and Habitat.—Central and western Jalisco (Fig. 3); in disturbed areas of oak and oak-pine forest at elevations from 1,600 to 1,900 m.

Phenology.—Flowering: March–June.

Emery Leonard annotated McVaugh's collection as an undescribed species of *Ruellia* L. On the basis of many of its macromorphological attributes, this species might indeed be mistaken for *Ruellia. Dyschoriste* Nees is usually easily distinguished from *Ruellia* by the presence of conspicuous pointed appendages at the base of each theca which are not known among American *Ruellia.* In *D. mcvaughii* these appendages are inconspicuous or absent. Characters of the pollen and calyx preclude the placement of this species in *Ruellia,* however. Pollen of *Ruellia* (Fig. 2a) is spherical and three-porate (Raj 1961, 1973). It is best characterized by its homobrochate-reticulate exine. Pollen of *Dyschoriste* (Fig. 2f) is prolate and three-colporate. The exine is verrucate with minute, rounded projections and striate with multiple pseudocolpi between the colpi. In Mexican *Dyschoriste,* the calyx tube is often prominently angled and hyaline between the major veins which extend into the lobes. The tube commonly ruptures at maturity in these weak regions. In most species of *Dyschoriste,* the calyx lobes are long attenuate to aristate and become stiff at maturity. Although there is considerable variation in calyx form among Mexican species of *Ruellia,* none have a partially hyaline tube with stiff, aristate lobes. In features of both pollen and calyx form, the plants described here conform to other species of *Dyschoriste.*

The reduced thecal appendages of *D. mcvaughii* are an unusual feature in the genus. Anthers of *McVaugh 12187* vary from having blunt appendages to lacking appendages altogether. *Daniel and Bartholomew 4828,* collected in the same general region, has anthers with the pointed appendages typical of other species of *Dyschoriste.* Elsewhere in the genus, variation of thecal appendages is evident among the Chiapas collections of *D. ovata* (Cav.) Kuntze cited by Daniel (1986). In these collections, thecal appendages vary from one or more hairlike projections to a single stout mucro.

Kobuski (1928) revised the American species of *Dyschoriste* and recognized 21 species as occurring in Mexico, none of which are similar to *D. mcvaughii.* Among the 40 American species he treated, only *D. pringlei* Greenman from Jalisco has corollas similar in size to those of *D. mcvaughii.* Recent study of *D. pringlei* for McVaugh's *Flora Novo-Galiciana* (Daniel, unpublished) reveals that this species differs from *D. mcvaughii* by having conspicuously flattened young stems, the dichasia crowded at or near the stem apex resulting in a headlike floral cluster, and blue corollas. A closer relative is undoubtedly *D. rubiginosa* Ramamoorthy & Wassh., a species with large reddish corollas recently transferred to *Dyschoriste* from *Hygrophila* R. Br. (Ramamoorthy and Wasshausen 1985). These two species can be distinguished from all other Mexican *Dyschoriste* by their reddish corollas and they can be distinguished from one another by the following couplet:

Diminutive perennial herb to 1 dm tall; distal leaves 1.1–4 times longer than wide; flowers 1–3 in leaf axils; bractlets straight; corolla 34–42 mm long; thecal appendages absent or up to 0.1 mm long ..... *D. mcvaughii*

Perennial herb or shrub to 1.5 m tall; distal leaves 5–15 times longer than wide; flowers more than 3 (up to 16) in leaf axils; bractlets

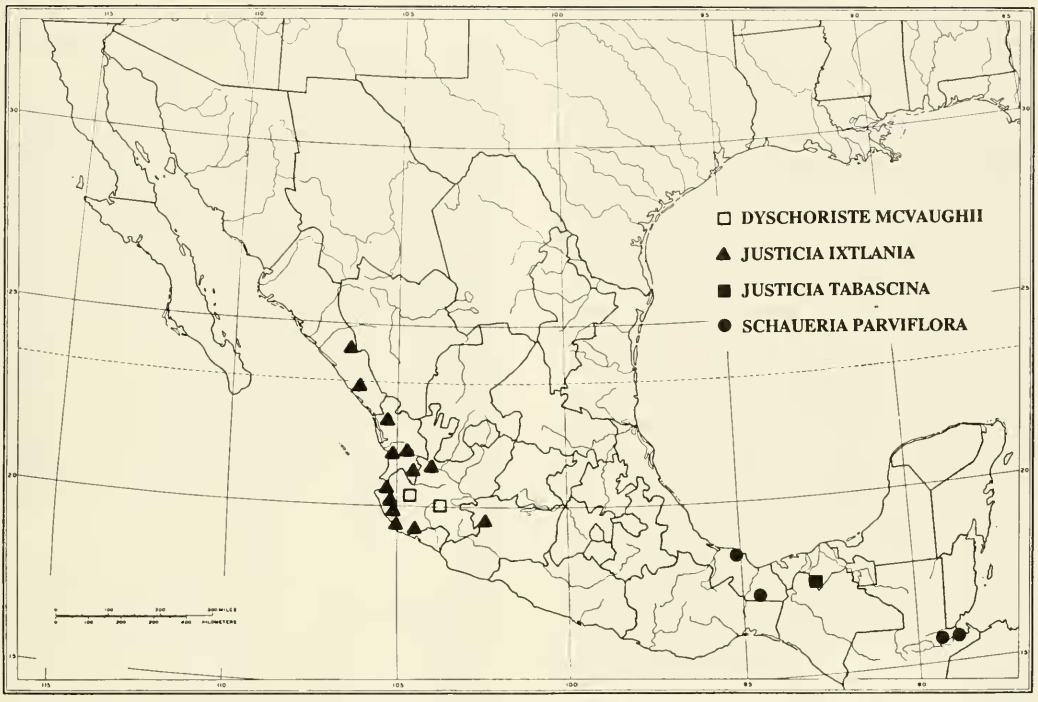

FIGURE 3. Map showing distribution of *Dyschoriste mcvaughii, Justicia ixtlania, J. tabascina,* and *Schaueria parviflora.*

usually conspicuously curved; corolla (20–) 25–34 mm long; thecal appendages 0.1–0.2 mm long ..... *D. rubiginosa*

PARATYPES.—MEXICO. Jalisco: between Ameca and Atenguillo, 14.6–16.2 mi W of Mixtlán, *T. Daniel & B. Bartholomew 4828* (CAS); Chiquilistlán, *M. Jones 378* (POM, US); La Palma, *M. Jones* s.n. (POM).

Justicia ixtlania T. F. Daniel, nom. nov.

Ixtlania acicularis M. E. Jones, Contr. West. Bot. 15:151. 1929.

TYPE.—MEXICO. Nayarit: Ixtlán [del Río], 19 February 1927, *M. E. Jones 23534* (Holotype: POM!, photo and fragments: US!; isotype: MO!). Not *J. acicularis* Sw. (1788).

Erect to reclined perennial herb to 3 dm tall. Stems subterete to subquadrate, sulcate, pubescent with flexuose to recurved eglandular trichomes 0.5–1.5 mm long, the trichomes evenly disposed or usually concentrated in 2 vertical lines, mature stems often glabrate. Leaves short-petiolate with petioles 2–11 mm long, blades somewhat coriaceous, lanceolate to ovate to elliptic (sometimes narrowly so) to subcirculate to obovate, 12–85 mm long, 11–47 mm wide, 1.1–5 times longer than wide, rounded to acute at apex, acute to rounded to truncate to subcordate at base, surfaces glabrous or pubescent, margin entire to subcrenate, white-callose. Inflorescence of axillary and/or terminal, densely bracteate, often clustered spikes (or spikelike thyrses) to 5 cm long, rachis pubescent with an understory of straight glandular and eglandular trichomes to 0.1 mm long and an overstory of longer flexuose eglandular trichomes, flowers 1 per node. Bracts sometimes conduplicate, ovate-lanceolate to lance-subulate, (3–)5–10 mm long, 0.8–1.5 mm wide, abaxial surface pubescent with an understory of straight glandular and eglandular trichomes to 0.1 mm long and an overstory of flexuose eglandular trichomes 0.2–1 mm long, margin subscarious and ciliate. Bractlets lanceolate to lance-subulate, (4–)5.5–9 mm long, 0.8–1.5 mm wide, pubescent like bracts. Calyx 5-lobed, 6.5–9 mm long, lobes divided nearly to base, lanceolate to lance-subulate, pubescent like bracts, margins scarious, posterior lobe reduced in size. Corolla entirely white to pink-purplish with purple markings on lower lip, 12–16 mm long, externally pubescent with straight to flexuose eglandular trichomes to 0.6 mm long, tube 8–11 mm

long, slightly ampliate distally, upper lip 3–4 mm long, bilobed with rounded lobes 0.1–0.5 mm long at apex, lower lip 3.5–5 mm long, with 3 subcirculate to obovate lobes 3–4 mm long, 2.5–3.5 mm wide, central lobe larger than lateral lobes. Stamens 3.5–4 mm long, thecae 0.6–1 mm long, unequally inserted, the lower (sometimes slightly larger) with a blunt calcarate basal appendage 0.2–0.3 mm long, pollen prolate, 2-colporate with each colpus flanked by 2 pseudocolpi, exine reticulate. Style 9–11 mm long, glabrous, stigma unlobed, subcirculate, oblique, 0.2–0.3 mm long. Capsule short-stipitate, 3–5 mm long, stipe 0.5–1.3 mm long, head ellipsoid, 2.5–3.7 mm long, externally pubescent with downward pointing to appressed eglandular trichomes 0.2–0.3 mm long and straight glandular trichomes up to 0.1 mm long (mostly near apex). Seeds 4 per capsule, somewhat flattened, subcordate to subcirculate to elliptic in outline, 1–1.3 mm long, 0.8–1.1 mm wide, surface papillose ($n = 14$, *Daniel and Bartholomew 4788*).

Distribution and Habitat.—West-central Mexico (Sinaloa, Nayarit, Jalisco, and Michoacán) (Fig. 3); along streambanks in deciduous or subdeciduous forest at elevations from 150 to 1,250 m.

Phenology.—Flowering and fruiting: March–April.

Leonard (1945) accepted *Ixtlania* as a viable genus, considered a probable relationship with *Beloperone* Nees, and noted a superficial resemblance to *Chaetothylax* (erroneously cited as "*Chaetochlamys*") *umbrosus* Nees of South America. *Chaetothylax* Nees differs from *Ixtlania* by having four (vs. five) calyx lobes, dimorphic thecae with the lower theca reduced or appearing abortive and separated from the upper theca by about 1 mm (vs. homomorphic thecae that are in contact with one another), and pubescent (vs. glabrous) seeds.

In a recent delimitation and infrageneric classification of *Justicia,* Graham (1988) included both *Beloperone* and *Chaetothylax* within *Justicia.* She did not examine material or discuss the disposition of *Ixtlania,* however. On the basis of the diagnostic characters of the corolla (i.e., rugulate) and androecium (i.e., two stamens with bithecous anthers, the lower thecae with basal appendages), it is clear that *Ixtlania* is likewise congeneric with the large and polymorphic *Justicia.* The chromosome number noted above for this species is also the most common number in *Justicia* (Daniel et al. 1984, in press).

Using Graham's (1988) provisional key to infrageneric taxa of *Justicia, J. ixtlania* appears to be most closely affiliated with sect. *Leucoloma* V. Graham from South America. *Justicia ixtlania* differs from the two species of this section by the appendages of the lower thecae which are more than one-fifth of the length of the thecae. It resembles Graham's description of this section in most other aspects, however, including the pollen form (Fig. 2c). In *Justicia* two-colporate, four-pseudocolpate pollen is known only in sect. *leucoloma* and two sections restricted to the Old World. This type of pollen has also been reported in *Mexacanthus* T. Daniel (Daniel 1981), a monotypic genus of Odontoneminae endemic to Mexico.

Considerable variation in corolla color was noted within living populations of this species. The specimen from Michoacán differs from those from Jalisco, Nayarit, and Sinaloa by its narrower, lanceolate to narrowly elliptic to oblanceolate leaves. In other respects it is identical to the more northerly collections.

Additional Specimens Examined.—MEXICO. Jalisco: vic. of Arroyo de Chorillo (tributary of Río de Quimixto), ca. 14 km SW of Puerto Vallarta, *A. Carter & F. Chisaki 1249* (MEXU, MICH, UC); Mpio. Cuautitlán, 1.5–2 km W de Tequesquitlán, *R. Cuevas G. 1052* (CAS); along Hwy. 200 S of Puerto Vallarta, 7.6 mi S of El Tuito, *T. Daniel 2070* (ASU, CAS, DUKE, K, MEXU, MO); between Tomatlán and Talpa de Allende, ca. 11 mi N of Tomatlán, *T. Daniel 2086* (ASU); along Hwy. 15 ca. 1 mi E of Nayarit border, *T. Daniel & B. Bartholomew 4788* (CAS); Mpio. La Huerta, Est. Biol. Chamela, Arroyo Chamela, *E. Lott 967* (ASU, CAS, DUKE, MO); Mpio. Tequila, Barranca de los Tanques, desv. al camino de San Martín de las Cañas, *L. Puga 6114* (IBUG). Michoacán: Los Chorros del Varal, Los Reyes, *B. Guillén Jiménez* s.n. (IBUG). Nayarit: 30 km NE of Tepic, 2 km E of Poichotitán, *M. Baker 1104* (ASU); La Bahada, SE of San Blas, *E. Lehto 24208* (ASU); San Felipe to Arroyo San José del Conde, *Y. Mexia 1930* (A, CAS, F, GH, MICH, UC, US); Potrero la Taberna, km 28 de Amatlán de Cañas, carr. Tepic-Barranca del Oro, *B. Ahuet Juan R.* s.n. (IBUG). Sinaloa: along Hwy. 40 between Villa Union and Cd. Durango, 26 mi SW of Tropic of Cancer, *T. Daniel 4019* (CAS); near Microondas tower near Villa Union, *E. Lehto 24273A* (ASU); Mpio. Concordia, along Hwy. 40 ca. 5 mi NE of Concordia, *A. Sanders et al. 4996* (CAS); Mpio. Cosalá, arroyo NE de Guadalupe de Los Reyes, *P. Tenorio L. et al. 8345* (CAS).

Justicia tabascina T. F. Daniel, nom. nov.

Tabascina lindenii Baillon, Hist. Pl. 10:445. 1891. (as *T. lindeni*) Type.—MEXICO. Tabasco: forêts de Teapa, October,

J. Linden s.n. (Holotype: P!, photographs: CAS, F). Not *J. lindenii* Houllet (1870).

Shrub to 2.5 m tall. Young stems subquadrate to quadrate, evenly pubescent with antrorse eglandular trichomes to 0.6 mm long, internodes often constricted just above nodes. Leaves petiolate with petioles to 33 mm long, blades ovate-elliptic to elliptic, 36–165 mm long, 12–83 mm wide, 2–3 times longer than wide, acuminate at apex, acute to subattenuate at base, surfaces pubescent with cauline type trichomes mostly or entirely restricted to major veins. Inflorescence of 1–4 terminal racemose thyrse(s) to 7.5 cm long, flowers paired at nodes, sessile to short (to 1 mm) pedicellate in axil of 2 bractlets, the flowers and bractlets pedunculate in axil of a bract with peduncles to 12 mm long, rachis and peduncles evenly pubescent with flexuose to antrorse eglandular trichomes to 0.6 mm long. Bracts often caducous, linear, 4–7 mm long, 0.6–1.5 mm wide, pubescent like rachis. Bractlets linear, 2.5–6 mm long, 0.8–1 mm wide, pubescent like rachis. Calyx 5-lobed, 10–16 mm long, tube 1–2 mm long, lobes valvate or nearly so, anterior lobes often connivent along edges, asymmetrically elliptic to lance-elliptic, 8–11 mm long, 2–3.2 mm wide, posterior lobe ovate-elliptic to elliptic, 10–13 mm long, 4–5 mm wide, all lobes pubescent with straight to flexuose eglandular trichomes to 0.5 mm long. Corolla yellow, 24 mm long, externally pubescent with glandular trichomes 0.05–0.2 mm long, tube 13 mm long, upper lip 11 mm long, entire, internally rugulate, lower lip 10 mm long with 3 rounded lobes to 3 mm long and 2.5 mm wide. Stamens 9 mm long, filaments glabrous, thecae subsagitate, unequally inserted, 5.3 mm long, rounded and lacking basal appendages, pollen prolate, 4-porate (to 4-subcolporate) with pores in a trema region containing 2 longitudinal rows of circular insulae, exine reticulate. Style 15–18 mm long, glabrous, stigma more or less capitate, 0.2 mm long. Capsule 19–22 mm long, glabrous, stipe 8–9 mm long, head 11–13 mm long. Seeds 4, flattened, subcirculate in outline, 4.2–5 mm long, 3.8–4.8 mm wide, the surfaces smooth.

Distribution and Habitat.—South-central Tabasco (Fig. 3); in lower montane rain forest at an elevation of about 140 m.

Phenology.—Flowering: March and October; fruiting: March.

The recent rediscovery of plants resembling the type, and only known collection, of *Tabascina lindenii* allows for a reevaluation of this monotypic genus. Cowan's collection was made in the region of the type locality and contains fruits which were unknown to Baillon (1891). Lindau (1895) maintained *Tabascina* as a genus of Justicieae, differing from *Justicia* by its broad, leaflike (vs. narrow) calyx lobes and flowers in terminal cymes (vs. flowers solitary or in spikes or contracted panicles). The rugulate corolla, androecium of two bithecous stamens, and pollen with trema regions studded with circular insulae (Fig. 2d, e) all suggest placement of this species within *Justicia.* The large, foliaceous, and heteromorphic calyx lobes that are nearly or completely valvate constitute an unusual feature of the species; however, among Mexican *Justicia, J. caudata* A. Gray also has valvate, or nearly valvate, and partially connivent calyx lobes. The inflorescence of *J. tabascina* consists of a single terminal thyrse (i.e., an indeterminate main axis with determinate lateral axes), or a cluster of these. The lateral axes consist of dichasia in which usually only a single peduncled flower develops. Additional floral buds of the dichasia are evident on the youngest portions of the thyrse but are represented only by prominent scars on the older portions. In view of the diversity of calyx forms and inflorescence types documented for species of *Justicia,* these characters would not appear to warrant recognition of *Tabascina* as distinct from *Justicia.*

Graham (1988) noted that four-aperturate pollen has been reported in a few New World species of *Justicia* but she was unable to confirm its occurrence. *Justicia tabascina,* with its four-aperturate pollen (Fig. 2b), can not be readily classified in any of the infrageneric taxa recognized by Graham (1988). Pollen of this species differs from Graham's (1988) type 3 pollen, which is characteristic of section *Drejerella* (Lindau) Graham, only by the presence of four rather than three apertures. *Justicia tabascina* exhibits several macromorphological features (e.g., unappendaged thecae) that exclude it from this section, however.

Additional Specimen Examined.—MEXICO. Tabasco: Mpio. Tacotalpa, Cerro de Madrigal, 7 km de las Est. Tacotalpa hacia Tapijulapa, *C. Cowan et al. 2860* (CAS).

Schaueria parviflora (Leonard) T. F. Daniel, comb. nov.

Streblacanthus parviflorus Leonard, J. Wash. Acad. Sci. 31: 1941. TYPE.—GUATEMALA. Izabal: Escoba, across bay (west) from Puerto Barrios, 3 May 1939, *P. Standley 72949* (Holotype: F!).

Schaueria calycobractea Hilsenbeck & Marshall, Brittonia 35: 362. 1983. TYPE.—MEXICO. Veracruz: Estación de Biología Tropical Los Tuxtlas, 22 July 1978, *D. Marshall 1* (Holotype: US fide Hilsenbeck and Marshall 1983 but not located there in 1989; isotypes: MEXU, TEX!, US).

Perennial herb to shrub to 2 m tall. Young stems subquadrate to quadrate-sulcate (often somewhat compressed), sparsely pubescent in 2 decussate lines with antrorse to flexuose to retrorse eglandular trichomes 0.1–0.4 mm long, soon glabrate. Leaves petiolate with petioles to 80 mm long, (lance-ovate to) ovate to ovate-elliptic, 50–180 mm long, 14–90 mm wide, 2–3.6 times longer than wide, acuminate to subfalcate at apex, (subcordate to) rounded to acute and usually somewhat asymmetric at base, surfaces glabrous (or pubescent along midvein of adaxial surface with cauline type trichomes). Inflorescence of terminal, sessile to pedunculate spikes to 55 mm long, peduncles to 15 mm long, rachis pubescent with antrorse to flexuose to retrorse eglandular trichomes 0.1–0.2 mm long either in 2 lines or more or less evenly disposed, flowers opposite in axils of bracts (sometimes in axils of distalmost pair of leaves as well). Bracts linear-lanceolate to lance-subulate, 12–22 mm long, 1.2–2.2 mm wide, abaxial surface glabrous to very sparsely pubescent with antrorse eglandular trichomes 0.1 mm long (especially distally) and rarely with glandular trichomes 0.05–0.1 mm long as well, margin sparsely ciliate with similar trichomes. Bractlets linear-setaceous to lance-subulate, 7–30 mm long, 0.8–1 mm wide, pubescent like bracts although always with glandular trichomes. Calyx 5-lobed, 10–25 mm long, lobes linear-setaceous to subulate, 9–24 mm long, 0.5–1.5 mm wide, irregularly unequal (with 2 or more lobes up to 25% longer and 50% wider than the others), 9–24 times longer than the tube, pubescent like bractlets. Corolla yellow (or white in Guatemala), 22–28 mm long, externally pubescent with eglandular trichomes 0.1–0.2 mm long, tube 14–18.5 mm long, ampliate at base and apex, upper lip 4.5–10 mm long, emarginate with 2 rounded lobes 0.3–0.7 mm long, lower lip 5.5–9.5 mm long with 3 lobes, lateral lobes linear to elliptic to oblanceolate-elliptic, 5–7 mm long, 1.2–2.8 mm wide, central lobe elliptic to oblanceolate, 5.5–7 mm long, 1.5–3 mm wide. Stamens attached 3.5–5 mm proximal to mouth of corolla, 8–9 mm long, thecae parallel, equally inserted, subequal, 1.4–2.5 mm long, pointed at base, pollen subspheric, 3-colporate with each colpus flanked by 2 pseudocolpi, pseudocolpi sometimes fused in intercolpal regions forming a pseudocolpal ring, exine reticulate, reticulum of intercolpal regions sometimes irregularly divided or fragmented. Style 19–23 mm long, glabrous, stigma bilobed with lobes 0.2 mm long. Capsule clavate, 10.5–16 mm long, glabrous (or pubescent with sparse glands to 0.05 mm long in Guatemala), stipe 4.5–8.5 mm long, head 6–9 mm long, retinacula 2–2.8 mm long. Seeds 4, flat, subcirculate to subcordate in outline, 3.5–5.2 mm long, 3–4.9 mm wide, surfaces and margin papillose.

DISTRIBUTION AND HABITAT.—Southeastern Mexico (southern Veracruz) and east-central Guatemala (Izabal) (Fig. 3); in lowland to lower montane rainforest (primary and secondary growth) from near sea level to 700 m.

PHENOLOGY.—Flowering: January, March–April, July, and October; fruiting: March, June–July, and October.

In the protologue of *Streblacanthus parviflorus,* Leonard (1941) noted a relationship with *S. cordatus* Lindau, a species of southern Central America. Gibson (1974) noted the occurrence of four calyx lobes in *Streblacanthus* Kuntze and maintained *S. parviflorus* as the northernmost-occurring species in the genus. In 1983, Hilsenbeck and Marshall described *Schaueria calycobractea* from Veracruz and noted that it appears similar to *Streblacanthus parviflorus* from Guatemala. They further noted that *Streblacanthus* could be distinguished from *Schaueria* Nees by its four-lobed (vs. five-lobed) calyx and unequally (vs. nearly equally) inserted thecae, but that these generic distinctions had not always been followed. They concluded that these genera are very similar and may not deserve separation. I agree with them that further study of the generic limits of *Schaueria* and *Streblacanthus* is desirable. I also concur with placement of the plants from the vicinity of the Estación de Biología Tropical Los Tuxtlas in *Schaueria* based on the distinctions provided above. However, the type of *Streblacanthus parviflorus* and other collec-

tions from Guatemala likewise have five-lobed calyces and subequally inserted thecae. Therefore, they should also be treated in *Schaueria*.

Since the description of *Schaueria calycobractea* (Hilsenbeck and Marshall 1983), in which two collections were cited, additional collections of this species have been made in the vicinity of San Andrés Tuxtla and in the Uxpanapa region about 150 km to the southeast. The three known collections from Guatemala differ from the Mexican collections by the presence of sparsely distributed glandular trichomes (vs. glabrous in Mexico) on the capsules and white (vs. yellowish in Mexico) corollas. Given the overall similarity in all other characters, these distinctions seem relatively minor.

Pollen of *Schaueria parviflora* from Veracruz (Fig. 2g, h) is similar to that of plants from Guatemala (Fig. 2i) and agrees with a description of the type, *S. calycotricha* (Link & Otto) Nees, from South America (Raj 1961).

Additional Specimens Examined.—GUATEMALA. Izabal: El Estor, *E. Contreras 11180* (LL); between Escobas and Montana Escobas, across bay from Puerto Barrios, *J. Steyermark 39324* (F). MEXICO. Veracruz: Mpio. San Andrés Tuxtla, cerca de Laguna Escondida, entre Sontecomapan y Montepio, *J. Beaman 5763* (F); Mpio. San Andrés Tuxtla, Estación de Biología Tropical Los Tuxtlas, *J. Calzada 764* (F, US), *A. Gómez-Pompa 4484* (F), *G. Ibarra M. 540* (MO), *G. Ibarra M. & S. Sanaca C. 1776* (MO), *G. Martínez C. 1708* (CAS, F), *R. C. Trigos 198* (F, US), *G. Webster 20895* (TEX); Mpio. Minatitlán, Zona de Uxpanapa, 1–2 km SE of La Chinantla (17°15′30″N, 94°26′30″W), *T. Daniel & T. Wendt 5810* (CAS, CHAPA, MEXU); Mpio. San Andrés Tuxtla, al sur de la Ebitrolotu, *A. Villegas H. 72* (CAS, F, US); Mpio. Hidalgotitlán, desde el Poblado 6, al S por la brecha y la vereda al horcajo oriental del Río Cuevas, 17°15′N, 94°30′W, *T. Wendt et al. 2604* (CAS).

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